Claims

1. A polyacrylamide gel utilising a buffer system comprising Tris(hydroxymethyl)aminomethane at the concentration range 0.15 to 0.25 M titrated with hydrochloric acid to a pH between 6.5 and 7.5.

2. The gel according to claim 1 comprising Tris(hydroxymethyl)aminomethane at 0.18 to 0.22 M and having a pH of 6.8 to 7.2.

3. The gel according to claim 2 comprising Tris(hydroxymethyl)aminomethane at about 0.20 M and having a pH of about 7.0.

4. The gel according to claim 1 having an acceptable shelf-life of at least 6 months after storage at about 4^0C, wherein the acceptable shelf-life being determined by the gel producing a resolving protein separation migration pattern under electrophoresis conditions.

5. The gel according to claim 4 having an acceptable shelf-life of at least 9 months.

6. The gel according to claim 5 having an acceptable shelf-life of about 12 months.

7. A method of preparing a polyacrylamide gel, the method comprising polymerising acrylamide in the presence of a cross-linking agent, water, a buffer system for the polyacrylamide gel and a polymerisation means;

wherein the buffer system comprises Tris(hydroxymethyl)aminomethane at the concentration range 0.15 to 0.25 M titrated with hydrochloric acid to a pH between 6.5 and 7.5.

8. The method according to claim 7 wherein the cross-linking agent is N,N'-methylene-bis-acrylamide, and the polymerisation means is selected from redox systems using ammonium persulfate and N,N,N',N'-tetramethylethylenediamine

(TEMED), photoinitiation systems using riboflavin, or thermal initiation using ammonium persulfate.

9. The method according to claim 8 wherein the buffer system comprises Tris(hydroxymethyl)aminomethane at 0.18 to 0.22 M and having a pH of 6.8 to 7.2.

10. The method according to claim 9 wherein the buffer system comprises Tris(hydroxymethyl)aminomethane at about 0.20 M and having a pH of about 7.0.

11. The method according to claim 7 wherein the gel has an acceptable shelf-life of at least 6 months after storage at about 4^0C, wherein the acceptable shelf-life being determined by the gel producing a resolving protein separation migration pattern under electrophoresis conditions.

12. The method according to claim 11 wherein the gel has an acceptable shelf-life of at least 9 months.

13. The method according to claim 12 wherein the gel has an acceptable shelf-life of about 12 months.

14. An apparatus for use in gel electrophoresis, the apparatus comprising a polyacrylamide gel utilising a buffer system comprising Tris(hydroxymethyl)aminomethane at the concentration range 0.15 to 0.25 M titrated with hydrochloric acid to a pH between 6.5 and 7.5.

15. The apparatus according to claim 14 wherein the gel comprises Tris(hydroxymethyl)aminomethane at 0.18 to 0.22 M and having a pH of 6.8 to 7.2.

16. The apparatus according to claim 15 wherein the gel comprises Tris(hydroxymethyl)aminomethane at about 0.20 M and having a pH of about 7.0.

17. The apparatus according to claim 14 wherein the gel has an acceptable shelf-life of at least 6 months after storage at about 4^0C, wherein the acceptable shelf-life being determined by the gel producing a resolving protein separation migration pattern under electrophoresis conditions.

18. The apparatus according to claim 17 wherein the gel has an acceptable shelf-life of at least 9 months.

19. The apparatus according to claim 18 wherein the gel has an acceptable shelf-life of about 12 months.

20. A method of performing electrophoresis, the method comprising:

(a) applying a sample containing one or more compounds to be separated to a gel of an electrophoresis apparatus according to claim 14;

(b) providing an electrode buffer; and

(b) subjecting the gel to an electric field for sufficient time such that at least one compound in the sample is caused to move into the gel.

21. The method according to claim 20 wherein electrode buffer comprises Tris(hydroxymethyl) aminomethane and 4-(2-hydroxyethyl)piperazine-1-ethanesulphonic acid (HEPES).

22. The method according to claim 21 wherein the electrode buffer has a concentration of 0.05 to 0.125 M and has a pH of 7.5 to 8.5.